**Filipino and Indonesian students bag top prizes in BIOTROP’s**

**Urban Agriculture Project Competition for SEA Creative Camp 2018**

Muntinlupa National High School from the Philippines was awarded as the first prize winner for its Comprehensive Algae Microfarm Project (CAMP) in SEAMEO BIOTROP’s Urban Agriculture Project Competition as part of the Southeast Asian Creative Camp (SEA-CC) 2018 held on 7-11 May 2018 in Lombok Province, Indonesia.

The second prize went to Mitra Industry MM2100 Vocational School from Bekasi for its Grow Light Technology in Sowing Seeds for Hydroponic Production Project while Sekolah Alam Insan Mulia Junior High School from Surabaya got the third prize for its Codename “Improve” Project.

**The CAMP** is an innovative, scalable local microfarm to produce high-value products such as food, medicine, and biofuel from Green Algae (*Chlorella vulgaris*) that are sustainable and profitable. This innovative method of growing algae takes unusable space in the school and turns it into an urban agricultural opportunity that is extremely productive. The microfarm measures 240 cm x 300 cm, consisting of 10 units of photobioreactors. A small unit with a size of 30 cm x 30 cm can hold 15 liters, which can produce 1kg dried algae in 3 months. One liter bottle with algae concentration of 0.25kg costs around USD 60 in the Philippines.

**The Glow Light Project** features the use of artificial red and blue lights from HPL LED lamp arrangements to help in seed germination and plant photosynthesis process. In the rainy season, the sunlight for the plant growth is limited which can cause the plants to be etiolated. This HPL LED lamp arrangement, using a ratio of 2 red to 1 blue LED lights can be a substitute for the sun’s violet light necessary for seed germination and plant growth. While the size theGlow Light technology could vary according to user’s requirement, 45x31x15cm unit only costs USD 13.

**The Codename “Improve”** Project is the improvement on the hydroponics production practice being implemented in SMP SAIM Indonesia. The improvement is the substitution of the AB Mix as plant nutrients by using rice leftovers of students after taking meals in their school canteen. The rice leftovers are fermented within a given length of time, mixed with a sugar solution and then filtered to become the substitute nutrient mix for hydroponic production. Other than being easy and cheap to make, the technology also promotes maximizing the use of food wastes from the school canteen. The team members also included in their project the provision of trash bins for the students to segregate their rice leftovers from other solid wastes after taking their meals, and an action plan in promoting hydroponic gardening using their technology to communities surrounding their school.

The projects were generated by the winning school teams from attending SEAMEO BIOTROP’s online training on urban agriculture held from 28 February to 22 March 2018. The winning teams bested 40 other teams from Indonesia, Malaysia, Philippines and Thailand that submitted their project proposals to SEAMEO BIOTROP. The criteria for selecting the winning projects included feasibility, innovativeness, efficiency, sustainability and impact to school and its surrounding communities. There were a total of 646 students and teachers from 79 schools that participated in the said online training.

The winning school teams received cash prizes and certificates from the Directorate General of Technical and Vocational Education (DGTVE) of the Ministry of Education and Culture of Indonesia (MoEC) and SEAMEO Secretariat (SEAMES) during the SEA-CC closing program on 11 May 2018. The winning schools, including the 7 other finalists, are now SEAMEO BIOTROP’s partner-schools in promoting school-based urban agriculture.

For the first time, the SEA-CC became a part of the 26th National Vocational Schools Competition which the DGTVE-MoEC of Indonesia organizes annually. The SEAMES coordinated the SEA-CC in cooperation with DGTVE-MoEC of Indonesia, SEAMEO BIOTROP, and SEAMOLEC.

Ms. Riana Hartati and Mr. Haritz Cahya Nugraha, SEAMEO BIOTROP’s research assistant and web developer, respectively, coordinated the urban agriculture online course.